

HIV infection at the intestinal barrier and opportunities for intervention

HIV remains a major global health challenge, with more than 40 million people living with HIV (PWH), the majority in sub-Saharan Africa. Although effective antiretroviral therapy (ART) has substantially increased life expectancy, PWH experience persistent systemic inflammation and increased risk of cardiometabolic diseases (CMD).

The gut is central to HIV-associated pathology with irreversible disruption of gut immune and epithelial homeostasis that persists despite ART, and contributes to chronic inflammation and downstream comorbidities. However, the mechanisms linking intestinal immune dysfunction, epithelial barrier damage and systemic inflammation remain incompletely understood.

I will present examples of the immunological consequences of HIV infection at tissue sites, explore interactions between immune and epithelial cells, and discuss how immunometabolic dysregulation may represent a central mechanism linking persistent gut pathology to systemic disease and give examples of opportunities for therapeutic intervention.